



HOW TO...

Create a time tracker

Organising your tasks at home or work can help you make better use of your time. Janet Swift demonstrates how you can use Excel to track and record what you're doing

EXPERT TIP

Pressing the Ctrl and ; keys simultaneously enters the current date into a cell, and pressing the Ctrl, Shift and ; keys enters the current time into a cell.

A spreadsheet can make light work of organising your time, whether you're apportioning work hours, putting together a housework rota or creating a study timetable. Even if you're not so busy that you need a computer program to help make sense of it, learning how to track time is a great way of getting to grips with some of the more difficult but useful features in Excel.

To find out how it all works, follow our example below. It uses a fictional secretarial service, so that we can also include the extra element of charging for time. Among the spreadsheet techniques covered here are working in a multisheet spreadsheet, setting up and using a lookup table, calculating elapsed time and using an IF statement to post entries to a summary.

1 Using a lookup table in the spreadsheet doesn't just save typing, it also means that you can recover more than one item of information – in this case, the activity description and the associated amount you charge for it. Headings are included here in order to make the

table more informative, but aren't necessary. Rather than copy our table, you can just use the TimeTracker spreadsheet on this month's cover disc.

In column A, starting in row 3, are the activity codes. We've used letters, but numbers would do just as well. Enter the formula to convert from the charge per hour to per minute, $=C3/60$, into cell D3 and then copy it down the column.

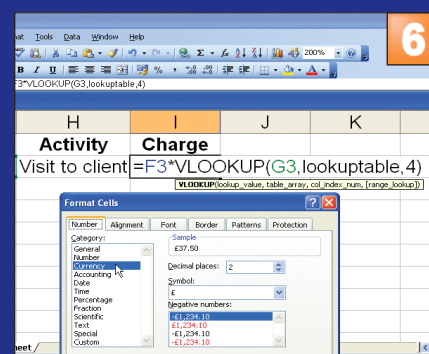
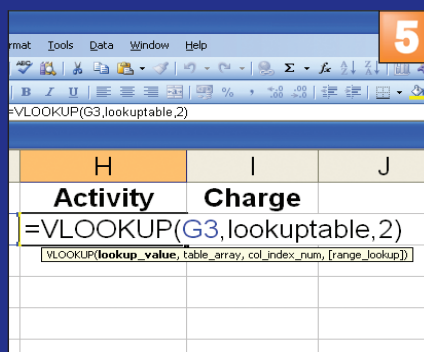
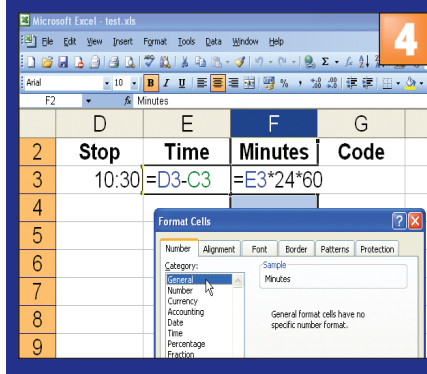
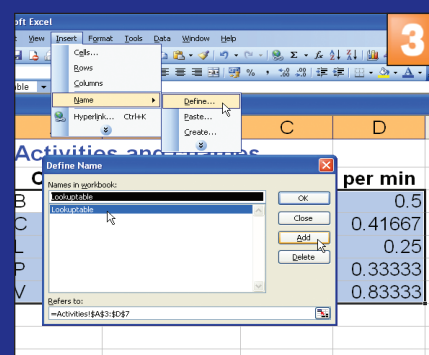
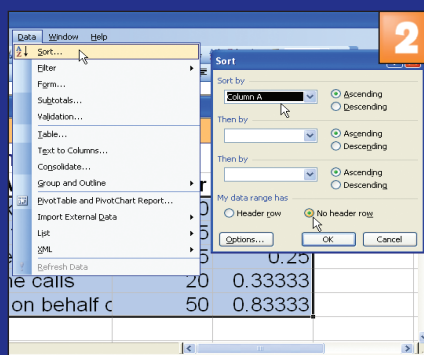
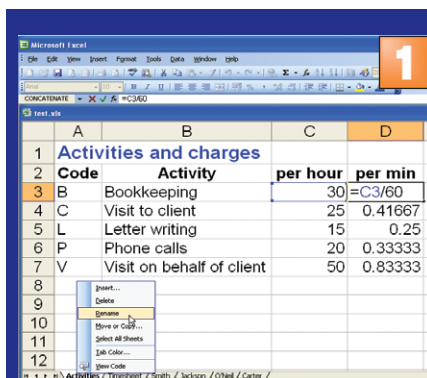
This is a multisheet spreadsheet and, to save confusion, it is worth naming each page. To do this in your own workbook, right-click on a worksheet's tab and select Rename.

2 Although you can add new entries to it at any time, the important point to remember about a lookup table is that it has to be maintained in ascending order. Don't try to do this manually; instead use Excel's Sort command. Highlight cells A3 to D7. From the Data menu choose Sort. As we have not selected the header row as well as the data, make sure that the lower part of the dialog box has No header row selected. In this case we want to sort on Column A, which is selected by default, so click OK.

3 In order to be able to use the lookup table more easily, it is worth naming the range where it's located. Highlight cells A3 to D7 and from the Insert menu, select Name, Define. Enter Lookuptable into the dialog box that opens. Click Add to add the name to the list, and click OK.

If you need to add extra items at a later date, insert them within the table, rather than at the end, so that the range name is automatically updated to refer to the entire table and remember to resort it to keep column A in ascending order.

4 Click on the tab for the next worksheet in our example spreadsheet, called Timesheet. We've already filled in a lot of the data for you. The dates in column B are formatted to display as day, month, year. Columns C and D contain the time entered using a colon as a separator between hours and minutes, such as 09:00 for 9am. Column E, labelled Time, will be used to calculate elapsed time, which will be converted into minutes in column F. Click in cell E3 and enter the formula $=D3-C3$. The answer in this case appears as 01:30, which means one hour and 30



minutes. But what happens when we try to multiply this by the hourly charge? However you try to format it, you won't see the right answer. What Excel has stored in E3 is the fraction of a whole day corresponding to one and a half hours, so in order to use the information we need to convert this value into minutes. The formula to do this needs to be entered in column F. Click on cell F3 and enter `=E3*24*60`, that is multiply by 24 hours in a day and 60 minutes in an hour.

However, there is a pitfall with this method of calculating time differences. You cannot use it when you cross midnight. If this happens, you will need to stop one activity at 23:59 and restart it at 00:00. Highlight the cells in column F, right-click and select Format Cells. In the dialog box that appears, select General on the Number tab.

5 Enter C in cell G3. The formula that will retrieve the activity description goes in cell H3. This formula performs a lookup of the code in G3 in the range Lookuptable, which is on the first sheet we worked on. It then returns the contents of the second column in the table. As the table is arranged in columns it is a 'vertical' lookup table, so we use the VLOOKUP function. In H3 enter `=VLOOKUP(G3,Lookuptable,2)`.

6 The formula to enter into cell I3 multiplies the number of minutes in F3 by the per-minute charge, corresponding to the code in cell G3 (which is in the fourth column of the lookup table). That is `=F3*VLOOKUP(G3,Lookuptable,4)`. Copy the formula down the column and format it. Open the Format Cells dialog box as you did in Step 4, but this time select Currency.

7 Next we need to enter more data. You can type directly into the spreadsheet but there is an easier alternative, which is to use a form. Go to the Data menu and select Form.

The form has fields labelled with the labels entered in the spreadsheet.

8 To add new data, click New, which blanks the form. When you've finished, click Close, which transfers the data to the spreadsheet and closes the form, or click New again, which transfers the data to the spreadsheet and blanks the form fields ready for new data.

One advantage of this method of working is that you don't need to copy the formulae in the spreadsheet; this happens automatically as you enter data. To practise this, save a copy of the current spreadsheet and blank out the already filled-in rows. Then copy the information from the original using the Form feature.

9 We have now added items assigned to four customers. The final steps are to post the entries for each of them to a separate page. These will form a summary that can be used as the basis of an itemised invoice.

We'll start with Smith's worksheet. Click on its tab to bring it to the front. Formulae are now required to copy information from columns B, H and I of the Timesheet worksheet into A, B and C of this one whenever there is a match between the customer name in column A of Timesheet and the name in A1. This is achieved using the IF function to compare the names between the two sheets.

The reference to A1 of the current sheet has to be absolute. When a match is found, data is copied, otherwise the cell is left empty. This uses the null value, or "", a pair of quotation marks without anything between. The formula to enter in A3 is `=IF($A$1=Timesheet!A3,Timesheet!B3,"")`.

Similar formulae are required in B3 (collecting data from column H) and C3 (collecting data from column I). This can be done most simply by including a column absolute cell reference to \$A3. You can type `=IF($A$1=Timesheet!$A3,Timesheet!`

H3,"") into B3 and copy this to C3. Then copy cells A3 to C3 down the page as far as row 14.

10 The formulae entered for Smith will work just as well for Jackson, O'Neil, Carter and any other customers. There are already sheets for these customers in the example workbook. If you're creating your own, you can add worksheets by right-clicking on a tab and selecting Insert, then Worksheet. To move the new worksheet to the end, right-click on its tab, select Move or Copy, then Move to the end. Rename the worksheet using the same right-click menu.

11 Click on the Smith tab to bring it to the front and select cells A2 to C14 (those containing the labels and all the rows of formulae). Copy these cells by selecting Copy from the Edit menu or pressing the Ctrl and C keys.

12 When pasting this data into another worksheet you need to do two extra things: convert the formulae to values so as to freeze the contents and keep the source column widths. In Excel 2003 you can do this by first pasting in the normal way – that is, click in the worksheet and select Paste from the Edit menu. When the data appears in the spreadsheet it will still be highlighted, and there will be a little button in the bottom right-hand corner that has the same clipboard icon as the Paste button on the toolbar. Click on this, and select Values and number formatting. Click on it again, and this time select Keep source column widths. If this feature has been switched off, reactivate it. Click on the Tools menu, select Options and go to the Edit tab in the dialog box that appears.

In earlier versions of Excel, go to the Edit menu, click on Paste Special and select Column Widths. Then do the same thing again, this time selecting Formats, and finally a third time, selecting Values. 

